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DUNBASS MUNE CONDUCTS DRILLING EXPERIMENTS

B. F. Skafa

At the end of 1950 and the beginning of 1951, the Mine imeni Karl Marks of the Artemugol' Combine carried on industrial experiments with the LBS-2s light drilling machine, using with it a 6.5-horsepower pneumatic motor instead of the previously used 4.2-kilowatt electric motor. The technical characteristics of the LBS-2s machine and the PRD-6.5 pneumatic motor are as follows:

Diameter of bore, mm

300

Inclination of bore, deg

Using screws to remove cuttings Without screws

45-90 0-45

Length of bore, drilling at following

angles:

45-90°, п 0-45°, п

up to 60

up to 30

Effective length of bar, mm

600

Speed of feed and lowering of drilling machine in drilling

At first speed, cm/min At second speed, cm/min

10.2 5.2

Max speed of cutting in drilling

At first speed, cm/min

1.26

At second speed, cm/min

1.36

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80.3 86.5

At second speed, rpm

Pneumatic motor
Type
Capacity, hp
Number of revolutions, rpm
Air pressure, atm

Air consumption, cu m/min

Number of revolutions of shaft At first speed, rpm

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PRD-6.5 6.5 1,500 3.5 5.8

Weight of LBS-2s machine without motor frame and supports, kg

332

Dimensions of Machine, mm

Position of Machine

	Operating	Operating	During	
	Vertically	Horizontally	Transportation	
Length	920	1,965	1,150	
Width	632	632	632	
Height	1,772	987	918	

During the period of experimentation, five vertical boreholes with a total length of 367 meters and 15 horizontal boreholes with a total length of 224 meters were drilled.

The drilling was carried on along coal seams of average or below-average toughness. The angle of dip of the seams was 68 degrees, and most of the seams were subject to sudden ejections of coal and gas. The wall rock was firm. The vertical boreholes were drilled along several seams varying in thickness.

Tests have indicated that the use of the LBS-2s machine in combination with the PRD-6.5 pneumatic meter is very effective and gives excellent results.

The maximum planned height for vertical boreholes drilled by the LBS-2s machine was up to 60 meters. Actually, boreholes have been drilled as high as 140 meters. The efficiency and dependability of the drilling bars of the LBS-2s are considerably higher than those of the SBM-3u machine. The drilling bars of the LBS-2s do not break or buckle.

LBS-2s machines in combination with PRD-6.5 pneumatic motors will be extensively used in Donbass mines.

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